

REMARKS

The specification has been amended slightly in order to improve its form.

Claim 1 was amended in order to better define the invention. The same is true of the above amendments to claims 2, 5, 6, 8 and 10. Claim 12 was amended in order to make it a little more definite. Claim 19 was added to protect novel subject matter deleted from claim 12 by the above amendment of the latter claim. Claim 20 further defines the novel subject matter of claim 1.

Claims 1, 2, 5, 6, 8, 10, 12 and 14 were rejected under 35 USC 102(e) as being anticipated by Reithmeier (USP 6,488,385).

The Reithmeier patent does not anticipate the invention as claimed in claims 1 and 8 of this application.

The Reithmeier patent discloses the combination of two or more abutting fluorescent lamps and a plurality of light-emitting diodes. But the purpose of the light-emitting diodes in Reithmeier is to add additional light so as to compensate for dark ridges that occur at the joints of the two or more abutting fluorescent lamps. In contrast, applicants' novel light source includes a discharge lamp which, during normal operation of the illumination system, has a fixed electromagnetic spectrum.

The light-emitting diodes of the present invention (claims 1, 8, etc.) are for the purpose of selectively adjusting or setting the

color temperature of the light emitted by the overall light source comprising the discharge lamp and the plurality of light-emitting diodes. This novel concept is not taught by the Reithmeier patent and so it cannot and does not anticipate the invention as claimed in claim 1 of this application. In order to more clearly delineate this novel concept over the applied prior art, claim 1 was amended above so that it now claims "means for selectively controlling, in operation, the color temperature of the light emitted by the light source. In contrast, Reithmeier discloses, at column 3, lines 12-15, an electronic ballast (6) for controlling the luminance (i.e. brightness) of the fluorescent lamps 2 and of the LEDs 5.

One skilled in the art, faced with the problem of a display device illumination system with a fixed color temperature determined by its electric discharge lamp, would not be taught by Reithmeier that the color temperature of the overall light source could be adjusted by adding a plurality of light-emitting diodes chosen and controlled so as to selectively set (adjust) the color temperature of the light produced by the illumination system to any desired value.

The Patent and Trademark Office further argues (§11 of the Office Action) as to the phrase "for selectively setting the color temperature of the light emitted by the light source (claim 1)," that such claimed subject matter is merely a recitation of intended use of the claimed invention and therefore does not patentably

distinguish these claims over the applied prior art, citing for legal support the CAFC cases of *In Re Casey*, 152USPQ235 and *In Re Otto*, 136USPQ458. But the examiner has misapplied these two cases since they do not represent the fact pattern in this application. For a discussion of the Casey case, see pages 12-13 of the amendment dated 10/16/03, which discussion is hereby incorporated by reference into this amendment.

The phrase in issue as to claim 1 is not the intended use of the illumination system, but rather a functional feature of the claimed controlling means.

As to claim 8, it was amended to better define the invention claimed therein. The LEDs in Reithmeier are not chosen so as to adjust the color temperature of the emitted light such that the color point of an image displayed by the display device is adjusted independently of the display device etc., as is now claimed in amended claim 8. This is a distinct improvement over the prior art where the color point is controlled by the display device itself, not by the illumination system as disclosed and claimed herein (see page 2, lines 15-32 of this application). As in claim 1, the functional feature recited in this claim is not an intended use of the over all illumination system but rather a functional feature of the LED.

Dependent claim 2, recites that the light-emitting diodes produce a light emission wave length for selectively increasing the

color temperature of the light emitted by the light source. As discussed above, Reithmeier does not disclose the concept of selectively setting the color temperature of the light emitted by the light source, much less selectively increasing same. The purpose of the Reithmeier light-emitting diodes is not to increase the color temperature of the light from the fluorescent lamps, but only to compensate the aforesaid dark strips between adjacent abutting fluorescent lamps. In fact, column 2, lines 33-37 of Reithmeier, cited by the Patent and Trademark Office, teaches away from the invention in that it suggests that the luminances between the lamp and the LEDs not differ, preferably by a difference less than 10%, in order to provide a homogeneous overall impression. The invention of claim 2 is not taught by the Reithmeier patent.

Claim 6 is dependent on claim 1 and relates to electronic control of the LEDs in order to control the color temperature of light from a light source, not for control of the intensity of such light, as in Reithmeier. Claim 6 is not anticipated by Reithmeier.

As to dependent claim 12, the claimed control electronics, as based upon parent independent claim 8, relates to control of the light emitting diode so as to adjust the color temperature of the emitted light source, not to make the luminance of the discharge lamp and LEDs the same, as in Reithmeier.

Claim 5, as amended, calls for the light emitting diodes and the discharge lamp to directly transmit their light, without

substantial reflection, to the light-emitting panel. The Office Action does not address this novel subject matter and so it cannot, as a matter of law, make out a prima facie case of anticipation since it does not present any factual support for the "102" rejection of this claim.

Claim 10 was amended above so that it now requires the first and second discharge lamps to be physically separated from one another by the light-emitting panel. Claim 10 is therefore not anticipated by Reithmeier.

The control electronics claimed in claim 14, which selectively adjusts the LED luminance flux dependent upon the illumination level of an image displayed by the display device, is not taught by Reithmeier. The Patent and Trademark Office argument rests on the mistaken impression that the functional limitation on the control electronics of claim 14 is the intended use of the claimed invention, which, similar to the discussion above as to claim 1, for example, is an invalid argument by the Patent and Trademark Office.

In view of the foregoing remarks, applicants submit that claims 1, 2, 5, 6, 8, 10, 12 and 14 are not anticipated by the Reithmeier device, and are in fact patentable thereover.

Claims 1, 2, 5, 6, 8, 9, 12, 14 and 18 were rejected under 35 USC 102(b) as being anticipated by German patent (DC20007134).

Claim 1 was amended above so that it now recites "means for selectively controlling" etc. The Patent and Trademark Office

relies, as to the control electronics of claim 6, on page 3, lines 17-19 of the German reference. But this reference speaks of "one special fluorescent lamp ballast". This implies that the reference requires the provision of a special, i.e. an unusual ballast that may or may not be known in the prior art. The undersigned is not aware of any known prior art ballast that can control a fluorescent lamp in combination with several LEDs, much less in the context of an illumination system for a display device. The German reference therefore appears on its face to be an incomplete disclosure of the apparatus and therefore constitutes an inoperative device that cannot serve as a "102" reference against claim 1 of this application. If the Patent and Trademark Office persists in its "102" rejection of claim 1, then the next Office Action should cite a prior art reference that discloses a fluorescent ballast that controls a fluorescent lamp in combination with several LEDs.

Claim 1 is not anticipated by the German reference since the reference does not provide the factual support necessary to make out a prima facie case of anticipation under 35 USC 102.

As to claim 2, the Patent and Trademark Office relies on page 4, line 7 and page 3, lines 3-7 of the German reference translation. But page 3, lines 3-7 of that translation says nothing at all of light emitting diodes that selectively increase the color temperature of the light emitted by the light source. As to page 4, line 7 of the reference, it mentions LEDs consisting of a set of

three colors, red, green and blue, but says nothing at all about increasing the color temperature of the light emitted by the light source. For example, if the red color far outweighed the green and blue colors, the overall effect could be a decrease in the color temperature of the emitted light. Since page 3, line 3-7 says nothing at all about the relative intensities of the red, green and blue LEDs, it is clear that the German reference does not teach the selective increase of the color temperature by the use of red, green and blue LEDs. The Office Action does not present the factual evidence requisite for a prima facie case of anticipation as to claim 2.

Claim 5 was amended to recite that the LEDs and discharge lamp directly transmit their light, without substantial reflection, to the light-emitting panel, whereas in Fig. 1 of the reference the discharge lamp 6 and LEDs 10 all rely on reflection from elements 9, 3 and 4. As to Fig. 3 of the reference, lamp 6 and LEDs 20 rely heavily on reflection from the walls 13 and 4, at least. Claim 5 is not anticipated by the German reference.

As to claim 6, the discussion above as to claim 1 and page 3, lines 17-19 of the German reference apply similarly to claim 6, wherefore this claim is not anticipated and also requires the citation of prior art by the Patent and Trademark Office related to the "special" lamp ballast mentioned in the German reference.

The control electronics of claim 12 operates under control of a

user of the illumination system. This feature is not mentioned in the Office Action and page 3, lines 17-19 of the German reference translation also does not mention same. The Office Action does not set forth the factual support required for a prima facie case of anticipation.

The novel feature in the last paragraph of amended claim 8 is not disclosed in the German reference, which therefore does not anticipate this claim either.

As to the arguments in paragraph 9 of the Office Action related to intended use or function as to certain functional phrases in claims 8, 12 and 14, see the discussion above as to the rejection of claim 1 based upon Reithmeier and the case law discussion incorporated by reference from the amendment dated 10/16/03.

As to claim 9, this claim, similar to claim 2, is not anticipated by the German reference since the material relied upon by the Patent and Trademark Office for the "102" rejection of claim 2 is inadequate, as discussed above, and is similarly inadequate to anticipate claim 9.

Claim 18 is not discussed in the Office Action, which therefore cannot set forth any factual evidence to support a prima facie case of anticipation as to this claim.

Claims 1, 2, 5, 6, 8, 9, 12, 14 and 18 are not anticipated by the German reference.

Claims 3, 4, 7 and 11 were rejected under 35 USC 103(a) as



being unpatentable over German Patent (DC20007134).

As to these claims, the Patent and Trademark Office relies for factual support on page 1, bottom paragraphs, and on page 2 of the translation of the applied reference.

The material in the German reference relied upon by the Patent and Trademark Office does not satisfy the novel subject matter of claims 3, 4 and 11 since the reference is silent on such claimed subject matter. The mention of a color temperature range of 5,000 to 10,000K at the bottom of page 1 of the translation refers to the prior art, i.e. EP915363, and not to the invention of the German reference.

As to the further Patent and Trademark Office argument that page 2 of the German reference discloses that the LEDs are variably adjusted using predominantly blue and green LEDs, this is not true. The German reference mentions three secondary light sources that emit blue, red and green light, and further states that these "secondary light sources may be monochromatic (primarily red) or also white". There is no support at page 2 of the German reference for the Patent and Trademark Office allegation as to a teaching therein of predominantly blue and green LEDs.

Claims 3, 4 and 11 are not obvious over the German reference because the alleged factual support for the "103" rejection is mistaken, wherefore the Office Action does not set out a prima facie case of obviousness as to these claims.

The Patent and Trademark Office admits that the German reference does not disclose the novel subject matter of claim 11 as to an optically coupled LCD device. There is no factual support for the alleged motivation to include a "LCD display coupled to the German light unit" and so the Office Action does not present a prima facie case of obviousness as to claim 11.

Claims 3, 4 and 11 were rejected under 35 USC 103(a) as being unpatentable over Reithmeier in view of Turnbull et al (USP 5,803,579).

The material in the Turnbull patent cited by the Patent and Trademark Office in support of its "103" rejection of claims 3, 4 and 11 has nothing at all to do with the problem solved by the present invention. Furthermore, since there is no indication or suggestion in the Reithmeier patent that any problem exists therein related to the color temperature of the fluorescent lamps, there is no reason or motivation to employ any blue LEDs of Turnbull in the device of Reithmeier. The Patent and Trademark Office attempt to combine the teachings of Turnbull et al with that of Reithmeier is based upon an impermissible hindsight reconstruction of such prior art (and based upon the present disclosure herein).

In addition, the Turnbull et al patent does not cure the aforesaid deficiencies in the Reithmeier patent discussed above in relation to the "102" rejection of claims 1 and 8, and so any combination of these two references, even if obvious, which it is

not, still would not produce the device as claimed in claims 3, 4 and 11 of this application.

Claims 3, 4 and 11 are unobvious over the applied prior art and are therefore patentable thereover.

Applicants respectfully traverse the Patent and Trademark Office arguments in paragraphs 19-22 of the Office Action for the reasons set out above. The Patent and Trademark Office argument in paragraph 19 is no longer applicable in view of the above amendments to claim 1 etc.

As to paragraph 20, the Patent and Trademark Office has misinterpreted applicants prior argument as to the legal precedents, i.e. the Casey and Otto CAFC cases.

The Patent and Trademark Office argument in paragraph 21 of the Office Action is not a correct statement of the law as to the effect of claimed functional statements in a rejection on prior art under 35 USC 102. The Patent and Trademark Office interpretation of the law in paragraph 22 of the Office Action is also in error.

In view of the above remarks, applicants submit that all of the rejected claims are patentable over the applied prior art.

Claim 19 is patentable because the applied prior art does not teach the claimed control electronics selectively adjusting the luminous flux of the at least one light emitting diode as determined by ambient light. Claim 20 also is patentable because the applied prior art does not teach the claimed control means for adjusting at

least one LED so that the color temperature of the light is set to a color temperature different from that of the discharge lamp alone.

In view of the incomplete nature of the Office Action, the next Office Action in this application should not be made final.

Please charge the cost of any additional fees in connection with the above amendment to Deposit Account No. 14-1270.

Reexamination and allowance of the application are respectfully requested.

Respectfully submitted,

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